

What is claimed

1. A maxillofacial anchoring and distraction system comprising

an anchoring screw body having a longitudinal axis and having a longitudinally extending threaded bore extending through the anchoring screw body, the anchoring screw body having an external screw thread,

an elongated generally cylindrical member having head and distal ends and a longitudinal axis, an externally threaded portion for threaded engagement in the threaded bore of the anchoring screw body, the head end including a driving surface, and the distal end having a selected diameter, and

a reaction element having a flat surface portion extending along a selected axis a distance at least as great as the diameter of the distal end of the elongated generally cylindrical member to serve as a reaction surface when placed in a horizontally extending osteotomy in a bone with the selected axis of the reaction element generally perpendicular relative to the horizontal axis of the anchoring screw body and the elongated generally cylindrical member.

2. A maxillofacial anchoring and distraction system according to claim 1 in which the reaction element comprises a bone screw having a generally cylindrical body portion with a

10017249 121501

longitudinal axis and having an external screw thread, the generally cylindrical body being formed with the flat surface portion recessed below the threads with the selected axis extending parallel with the horizontal axis.

3. A maxillofacial anchoring and distraction system according to claim 1 in which the reaction element comprises a relatively wide mesh body having a plurality of holes formed therethrough and a solid tip portion extending from the body, the tip portion provided with the flat surface portion.

4. A maxillofacial anchoring and distraction system according to claim 3 in which the holes comprise both generally circular holes and elongated holes.

5. A maxillofacial anchoring and distraction system according to claim 3 in which a weakened portion is formed between the tip portion and the body.

6. A maxillofacial anchoring and distraction system according to claim 5 in which the weakened portion is formed by opposing slots formed in the tip portion.

10017219-121501

7. A maxillofacial anchoring and distraction system according to claim 1 in which the flat surface portion extends greater than the diameter of the distal end of the elongated generally cylindrical member.

8. A maxillofacial anchoring and distraction system according to claim 1 in which the flat surface portion extends approximately twice the diameter of the distal end of the elongated generally cylindrical member.

9. A maxillofacial anchoring and distraction system according to claim 2 in which the bone screw has a head formed with an indexing surface portion to reflect the angular position of the recessed flat surface portion.

10. A maxillofacial anchoring and distraction system according to claim 9 in which the head has a generally circular outer periphery formed with a flat surface portion in the outer periphery at an angular position matching that of the angular position of the flat surface portion in the body.

11. A maxillofacial anchoring and distraction system according to claim 2 in which the head is formed with a recessed, polygonal driving feature.

10017219 121504

12. A maxillofacial anchoring and distraction system comprising

a generally cylindrical base plug having a longitudinal axis, a crestal end and having a closed ended, threaded bore formed through the crestal end and extending along the longitudinal axis,

an anchoring screw body having a longitudinal axis and having a head end and a distal end and having a longitudinally extending bore extending through the anchoring screw body, the bore being threaded along at least a portion of its length and having a circumferentially extending sealing surface, the anchoring screw body having external threads,

an elongated generally cylindrical member having first and second ends, an externally threaded portion for threaded engagement in the threaded bore of the anchoring screw body, the second end having a diameter selected to be received within the bore of the base plug bypassing the threaded portion of the bore and the sealing surface of the screw body, and

a sealing screw having a distal free end and an external thread for threaded engagement in the threaded bore of the anchoring screw body after the generally cylindrical member has been removed upon completion of distraction, the sealing screw having a circumferentially extending sealing surface for engagement with the sealing surface of the anchoring screw body.

10017219.121501

13. A maxillofacial anchoring and distraction system according to claim 12 in which the sealing surface of the sealing screw is formed of a generally cylindrical surface and the sealing surface of the sealing screw is formed of a generally cylindrical surface having a slight taper with the diameter increasing in a direction going toward the distal end.

14. A maxillofacial anchoring and distraction system according to claim 12 in which the head end is formed with a polygonal driving surface.

10017219 .121501